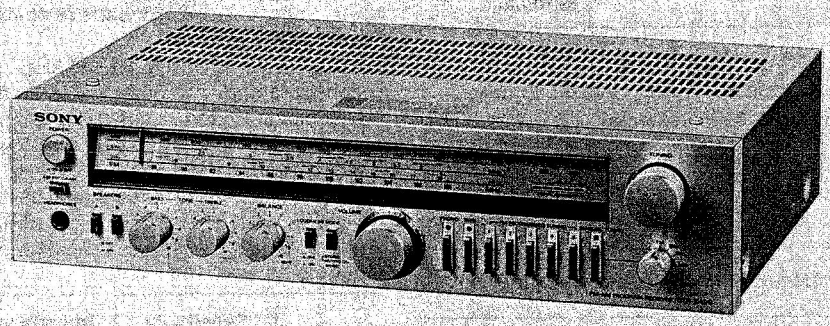
STR-242S

E Model



FM-AM PROGRAM RECEIVER

SPECIFICATIONS

General

System	Superheterodyne FM/AM tuner, Direct coupled quasi-complementary symmetry power amplifier circuit (SEPP OTL)
Power requirements	120, 220, or 240 V ac adjustable, 50/60 Hz
Power consumption	120 W
AC outlets	Two unswitched, total 200 W
Dimensions	Approx. 430 × 110 × 315mm (w/h/d) (17 × 4¼ × 12⅜ inches) including projecting parts and controls
Weight	Approx. 6.2 kg (13 lb 11 oz) net Approx. 7.7 kg (17 lb) in shipping carton

FM tuner section

Tuning range	87.5–108 MHz
Antenna terminals	300 ohm balanced 75 ohm unbalanced
Intermediate frequency	10.7 MHz
Sensitivity at 50 dB quieting	3.5 μV, 16.1 dBf (mono) 45 μV, 38.3 dBf (stereo)
Usable sensitivity	IHF 1.8 μV, 10.3 dBf
Signal-to-noise ratio	75 dB (mono), 70 dB (stereo)
Harmonic distortion	0.2% (mono), 0.3% (stereo), at 1 kHz
IM distortion	0.2% (mono), 0.3% (stereo)
Separation	45 dB at 1 kHz
Frequency response	30 Hz–15 kHz $^{+0.5}_{-2}$ dB
Alternate channel selectivity	60 dB (400 kHz)
Capture ratio	1.5 dB
AM suppression ratio	54 dB
Image response ratio	45 dB
Spurious response ratio	70 dB
Muting threshold	Approx. 5 μV

— Continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®

SERVICE MANUAL

SW/MW tuner section

	SW_1	SW_2	MW
Tuning range	2.3–6.2 MHz	7–17.9 MHz	522–1,602 kHz
Antenna	External antenna terminal		Built-in ferrite rod antenna, External antenna terminal
Intermediate frequency	450 kHz		
Usable sensitivity	30 μV, external antenna (4 MHz)	30 μV, external antenna (12 MHz)	250 μV/m, built-in antenna (1,000 kHz) 100 μV, external antenna (1,000 kHz)
Signal-to-noise ratio	52 dB (5 mV)		52 dB (50 mV/m)
Harmonic distortion	0.3% (5 mV, 400 Hz)		0.3% (50 mV/m, 400 Hz)
Selectivity	30 dB (9 kHz)		35 dB (9 kHz)

Amplifier section

Continuous RMS power output (less than 0.08% THD, both channels driven simultaneously)
at 20 Hz–20 kHz
22 + 22 watts (8 ohms)
at 1 kHz
25 + 25 watts (8 ohms)

Dynamic power output (IHF constant power supply method)
65 watts (8 ohms)

Power bandwidth (IHF)
15 Hz–35 kHz

Damping factor 30 at 1 kHz, 8 ohms

Harmonic distortion Less than 0.08% at rated output
Less than 0.05% at 1 W output

Intermodulation (IM) distortion (60 Hz : 7 kHz = 4:1)
Less than 0.08% at rated output
Less than 0.05% at 1 W output

Residual noise Less than 0.05 μW at 8 ohms

Inputs

	Sensitivity	Impedance	S/N	Weighting network
PHONO	2.5 mV	50 kilohms	75 dB	A
TAPE	150 mV	50 kilohms	90 dB	A

Measured with rated output power into 8-ohm loads (both channels driven simultaneously) at 1kHz.

Outputs (with rated input)

REC OUT	Voltage 150 mV	Impedance 10 k ohms
HEADPHONES	Accepts all low or high impedance headphones.	
SPEAKER	8–16 ohm speakers are suitable.	

Frequency response PHONO
RIAA equalization curve ±0.5 dB
TAPE
10 Hz–50 kHz $^{+0}_{-3}$ dB

Tone controls BASS ±8 dB at 100 Hz
TREBLE ±8 dB at 10 kHz

Loudness control (att. 30 dB)
+8 dB at 100 Hz

SERVICING NOTE

MELF (Metal Electrodes Face-Bonding) Components

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page. Replace MELF components with the lead type components.

MELF components are soldered directly to the surface of the printed circuit board.

MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors. Note, however, that all MELF resistors are rated at ¼W and ±5%.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

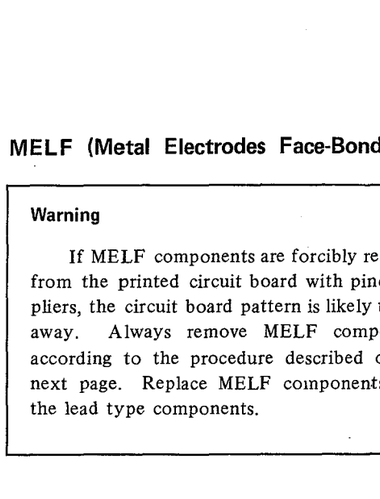
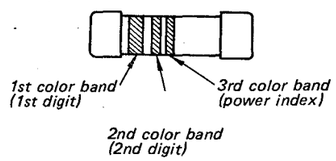
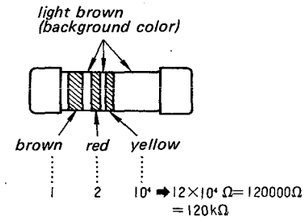


Fig. 1

2. Color Code Reading



(Example of Resistor)



(Example of Capacitor)

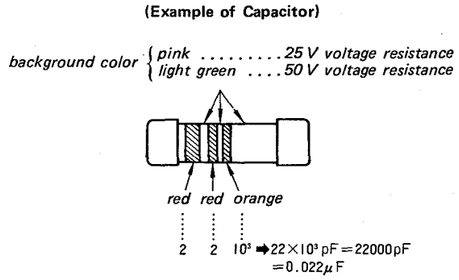


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4mm in diameter and file the tip down to the angle shown in the diagram.

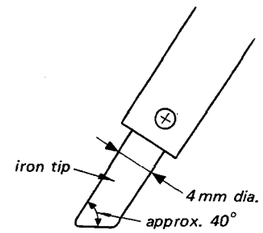


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

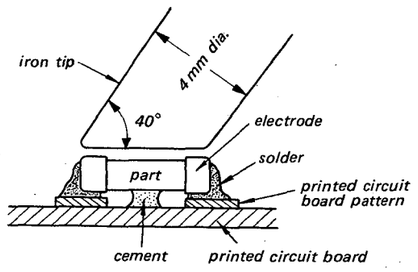


Fig. 4

4. Use lead type resistors or capacitors to replace the MELF components.
These replacements may be mounted either with short leads (see Fig. 5), or by covering a lead with tubing (see Fig. 6).

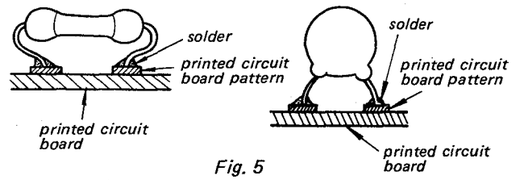


Fig. 5

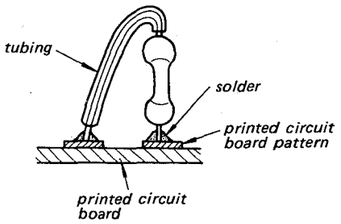
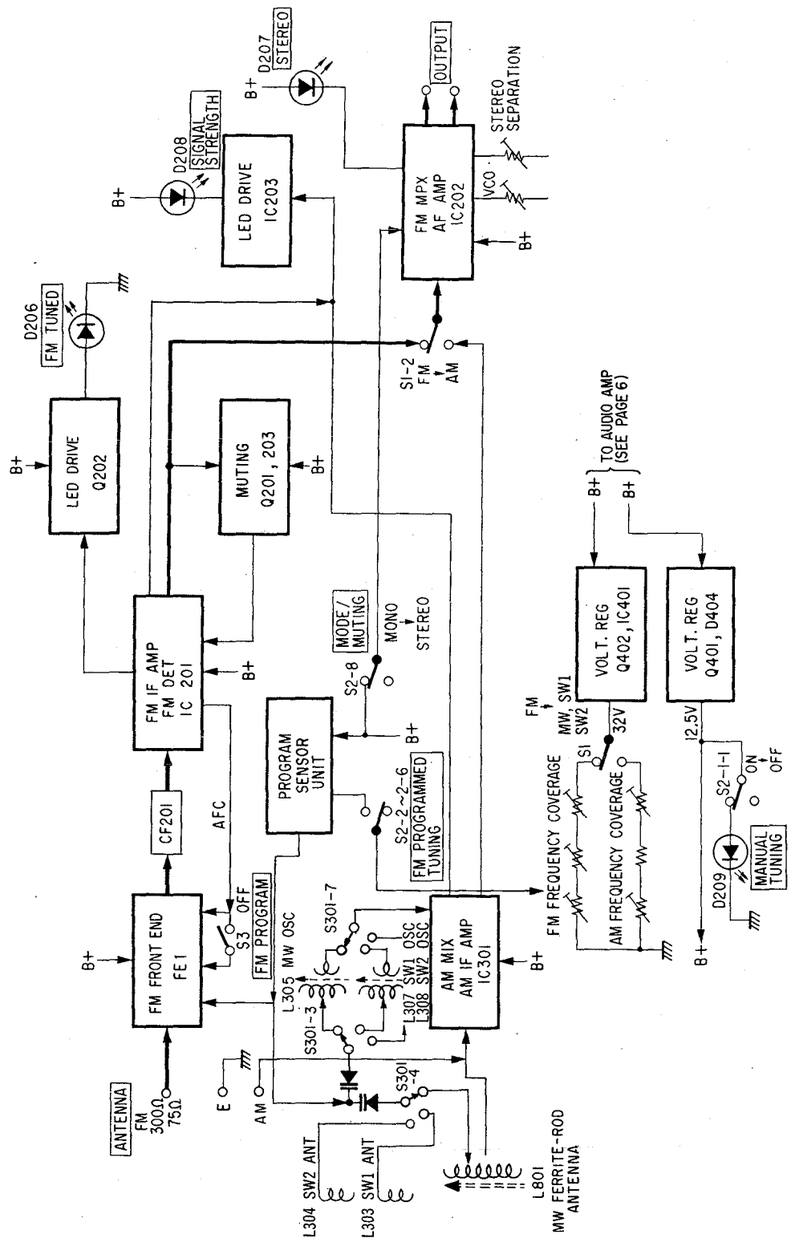


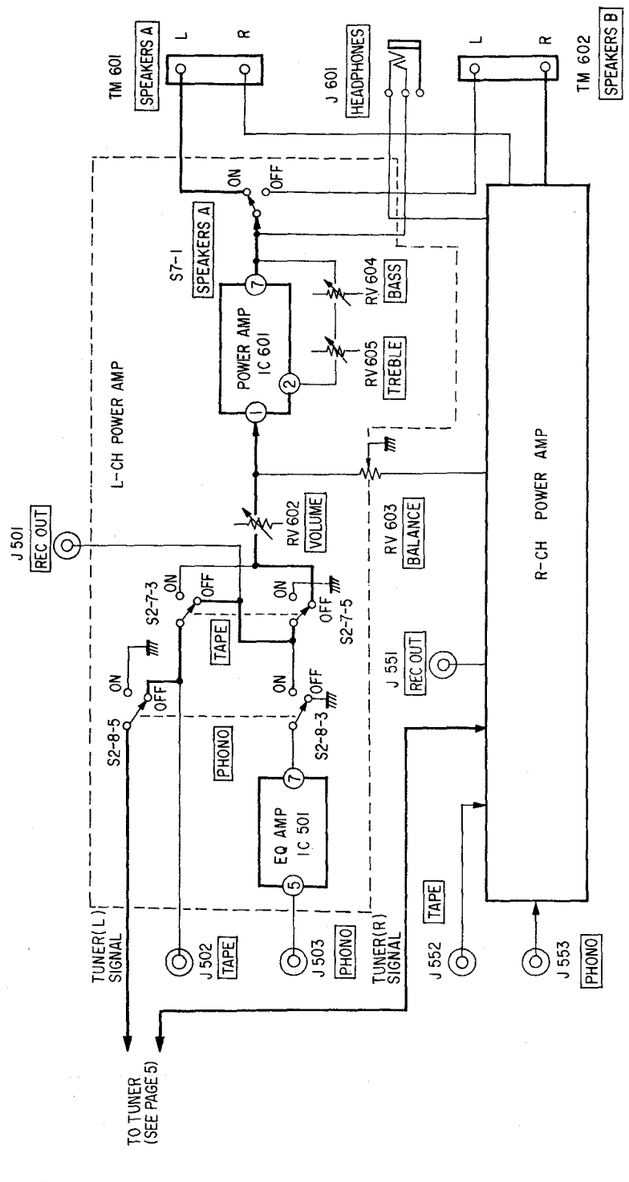
Fig. 6

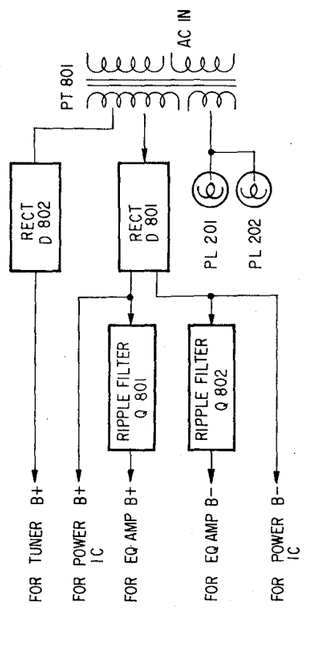
SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



– AUDIO AMP SECTION –





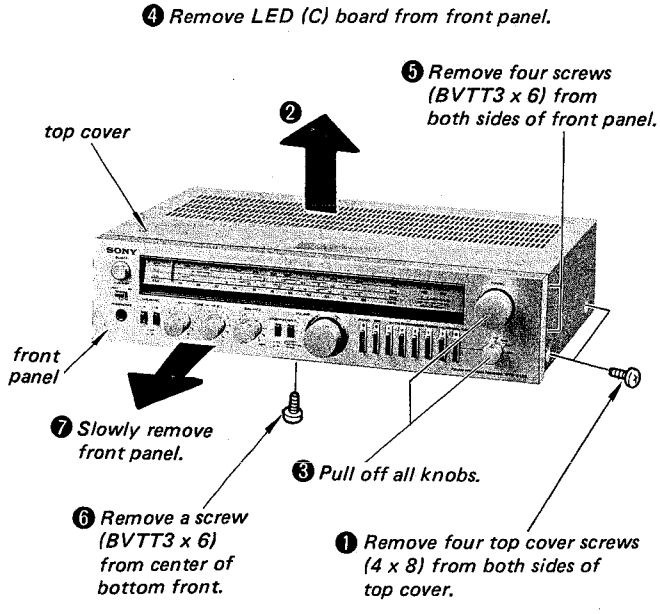
SECTION 2
DISASSEMBLY

2-1. DISASSEMBLY

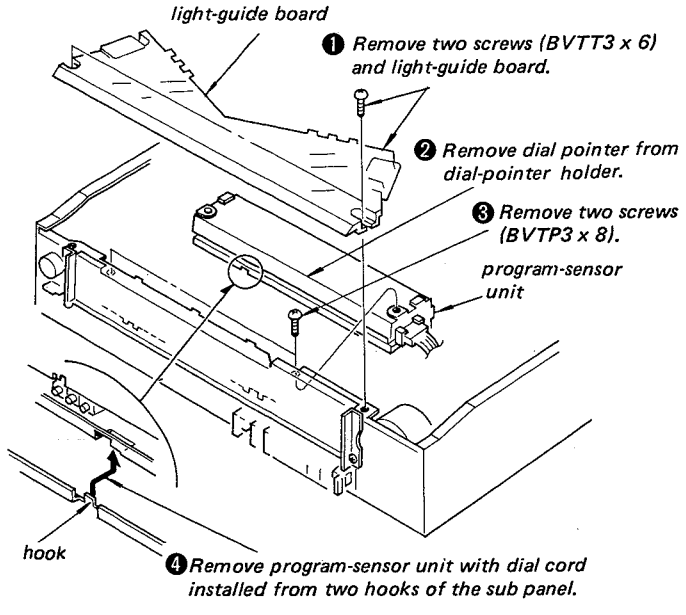
Note: Follow the disassembly procedure in the numerical order given.

TOP COVER AND FRONT PANEL

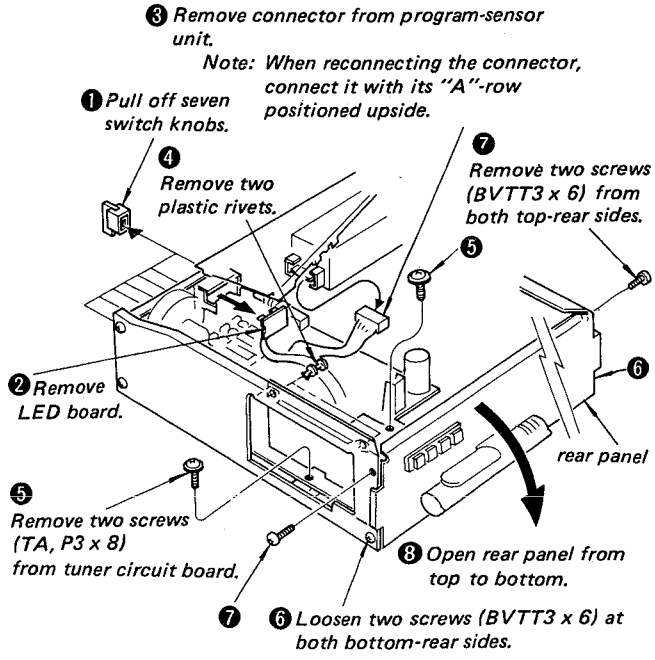
Top Cover: ❶ – ❷
Front Panel: ❶ – ❼

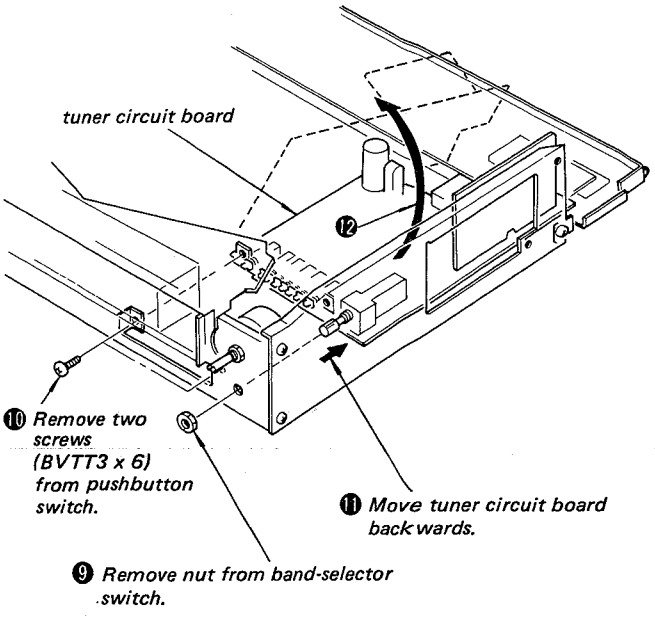

❹ Remove LED (C) board from front panel.
❺ Remove four screws (BVTT3 x 6) from both sides of front panel.
top cover
❷
front panel
❼ Slowly remove front panel.
❸ Pull off all knobs.
❻ Remove a screw (BVTT3 x 6) from center of bottom front.
❶ Remove four top cover screws (4 x 8) from both sides of top cover.

PROGRAM-SENSOR UNIT

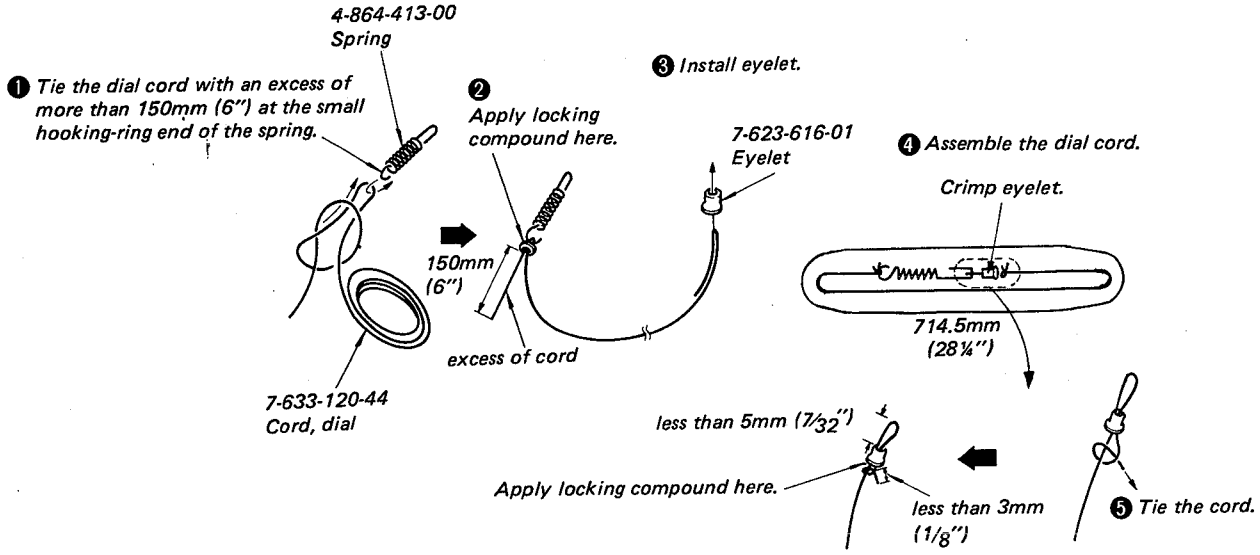

light-guide board
❶ Remove two screws (BVTT3 x 6) and light-guide board.
❷ Remove dial pointer from dial-pointer holder.
❸ Remove two screws (BVTP3 x 8).
program-sensor unit
hook
❹ Remove program-sensor unit with dial cord installed from two hooks of the sub panel.

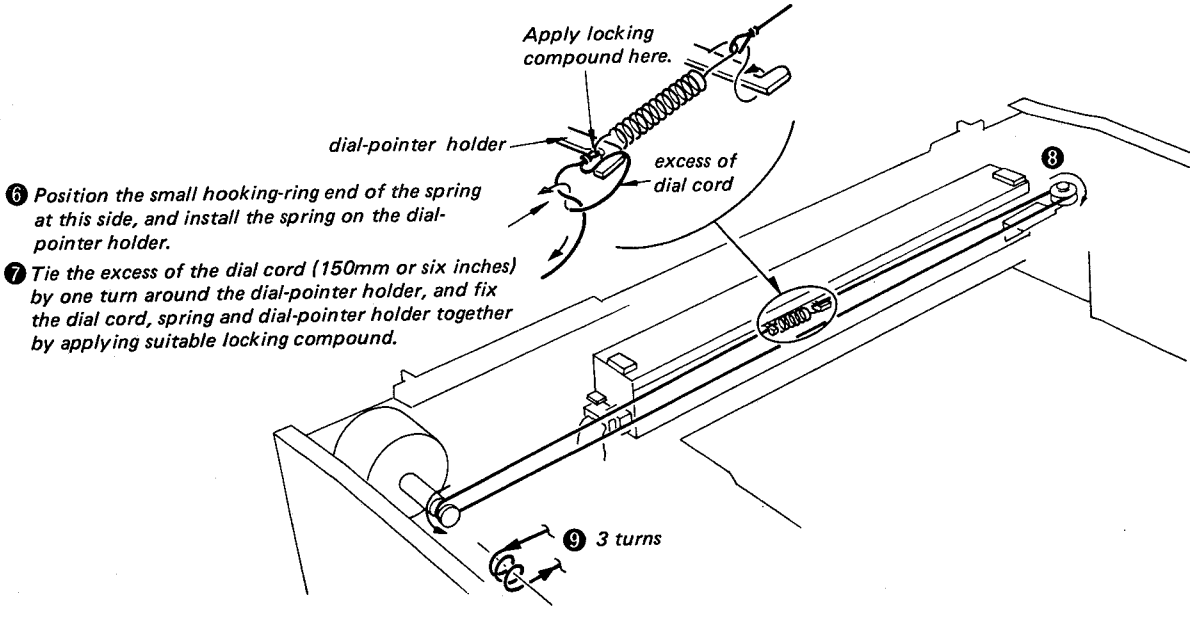
TUNER BOARD


❸ Remove connector from program-sensor unit.
Note: When reconnecting the connector, connect it with its "A"-row positioned upside.
❶ Pull off seven switch knobs.
❹ Remove two plastic rivets.
❼ Remove two screws (BVTT3 x 6) from both top-rear sides.
❺
❷ Remove LED board.
❻
rear panel
❺ Remove two screws (TA, P3 x 8) from tuner circuit board.
❽ Open rear panel from top to bottom.
❼ ❻ Loosen two screws (BVTT3 x 6) at both bottom-rear sides.


tuner circuit board
⓬
❿ Remove two screws (BVTT3 x 6) from pushbutton switch.
⓫ Move tuner circuit board backwards.
❾ Remove nut from band-selector switch.

2-2. DIAL-CORD STRINGING




Apply locking compound here.
dial-pointer holder
excess of dial cord
❻ Position the small hooking-ring end of the spring at this side, and install the spring on the dial-pointer holder.
❼ Tie the excess of the dial cord (150mm or six inches) by one turn around the dial-pointer holder, and fix the dial cord, spring and dial-pointer holder together by applying suitable locking compound.
❽
❾ 3 turns

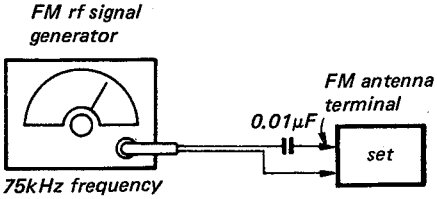
❿ Verify that the dial pointer moves to the right when the TUNING knob is turned clockwise and that the TUNING knob turns smoothly.

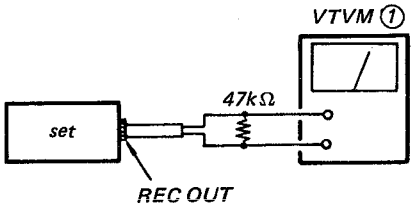
SECTION 3
ADJUSTMENTS

FM SECTION

Setting:

MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO





- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FRONT-END BLOCK

Adjustment is not necessary. But if it has been meddled with in some way, and if the adjustment is necessary by all means, adjust the FM front-end block as follows.

FM FREQUENCY COVERAGE ADJUSTMENT 1

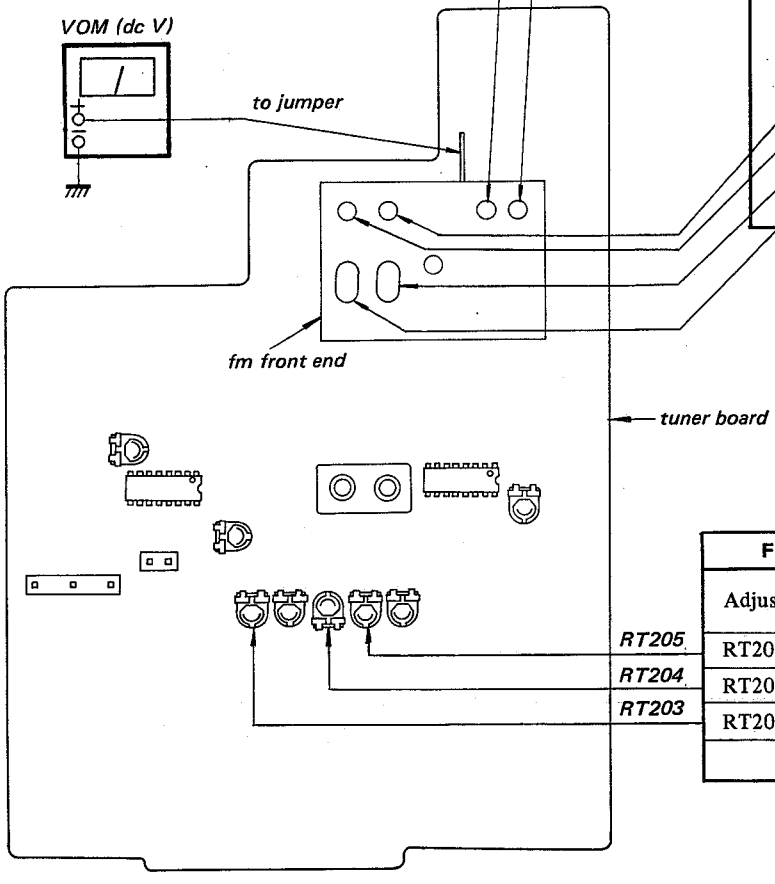
1) Be sure to perform this adjustment before the FM frequency coverage adjustment 2.

TUNING CONTROL VOLTAGE ADJUSTMENT		
Adjustment Part	Dial Indication	VOM Reading
RT205	lowest frequency	2.8V
RT204	98MHz	8.0V
RT203	highest frequency	22.5V
Adjust for a specified reading on VTVM ②.		

LOCAL OSCILLATOR FREQUENCY ADJUSTMENT		
Adjustment Part	Dial Indication	FM Rf Signal Generator Frequency
CT3	highest frequency	108MHz
T2	lowest frequency	88MHz
Adjust for a maximum reading on VTVM ①.		

2) Be sure to perform this adjustment after the FM frequency coverage adjustment 2.

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
CT2	108MHz
CT1	
L4	88MHz
L2	



FM FREQUENCY COVERAGE ADJUSTMENT 2		
Adjust	FM Rf Signal Generator Frequency	Dial Indication
RT205	88MHz	88MHz
RT204	98MHz	98MHz
RT203	108MHz	108MHz
Adjust for a maximum reading on VTVM ①.		

FM DISCRIMINATOR ALIGNMENT 1

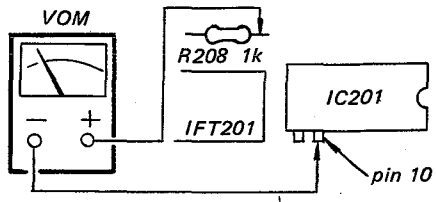
Setting:

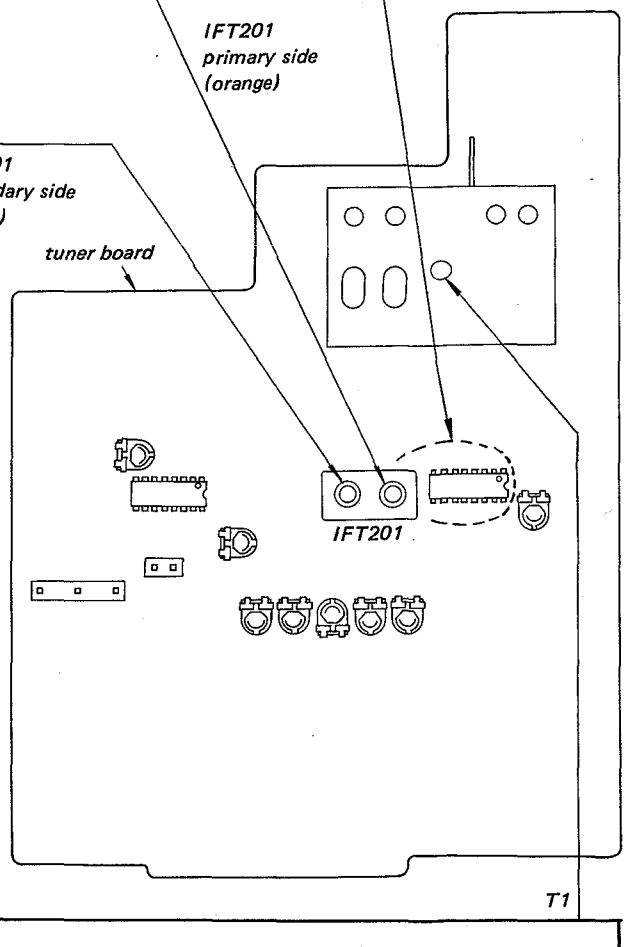
MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO
TUNING:	Detuned position

Procedure:

Adjust the orange core (primary-side) of IFT201 for 0V dc reading on VOM.

Note: When replacing the ceramic filter (CF201), perform this alignment.

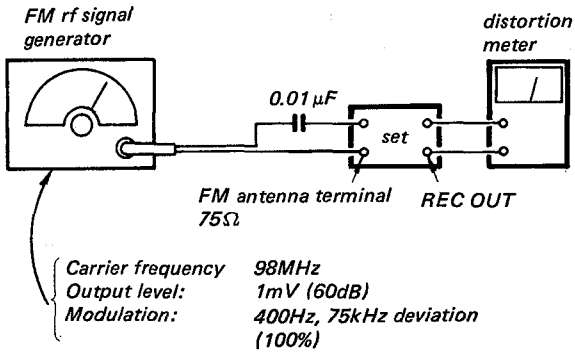




FM DISCRIMINATOR ALIGNMENT 2

Setting:

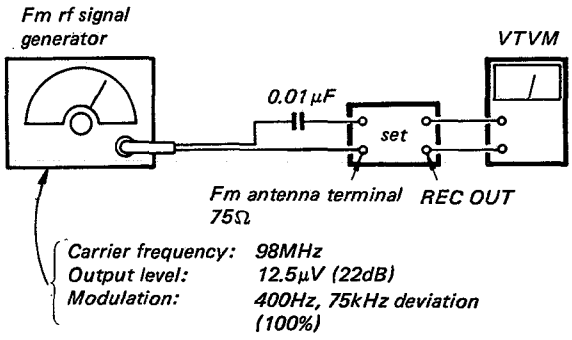
MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO



Procedure:

Adjust the black core (secondary side) of IFT201 for minimum distortion.

FM IF ALIGNMENT



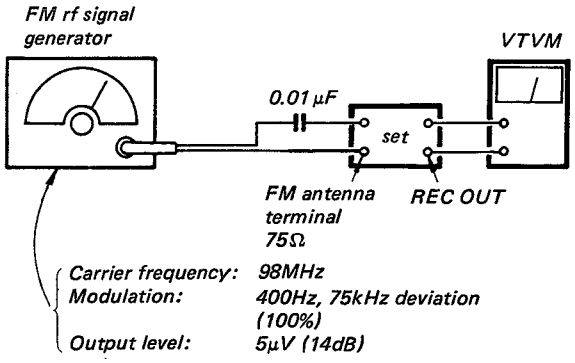
Setting:

MANUAL TUNING switch:	ON
Band Selector:	FM
MODE switch:	MONO

Procedure:

Adjust T1 for maximum reading on the VTVM.

MUTING LEVEL ADJUSTMENT



Setting:

MANUAL TUNING switch:	ON
MODE switch:	STEREO

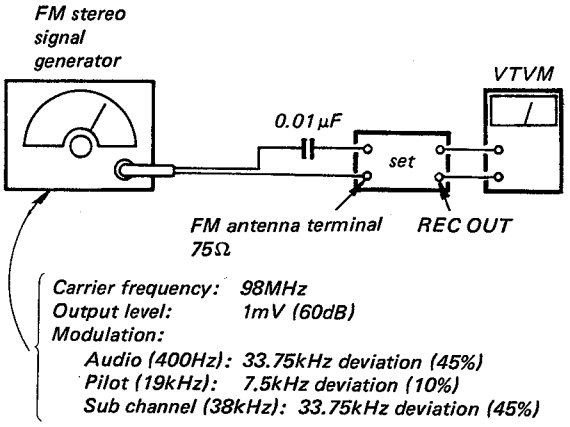
Procedure:

1. Turn RT208 and stop it just when the VTVM indication suddenly increases.
2. If necessary, turn RT208 fully clockwise and make sure that the VTVM indication increases when the output level of the FM rf signal generator is set to 16μV (24dB).

FM STEREO SEPARATION ADJUSTMENT

Setting:

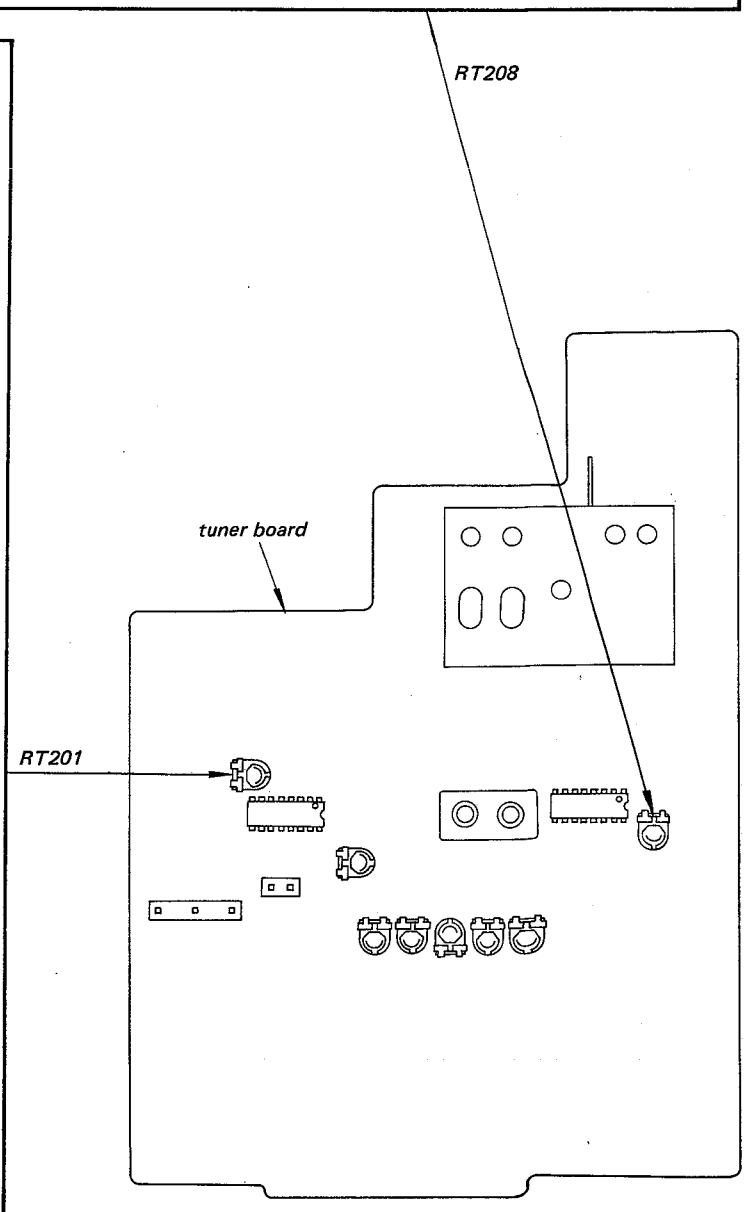
MANUAL MUTING switch:	ON
Band Selector:	FM
MODE switch:	STEREO



Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RT201 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RT201 for minimum reading.

L-CH Stereo separation: Ⓐ − Ⓑ
R-CH Stereo separation: Ⓒ − Ⓓ
The difference between separations Ⓐ→Ⓑ and Ⓒ→Ⓓ are to be equal.

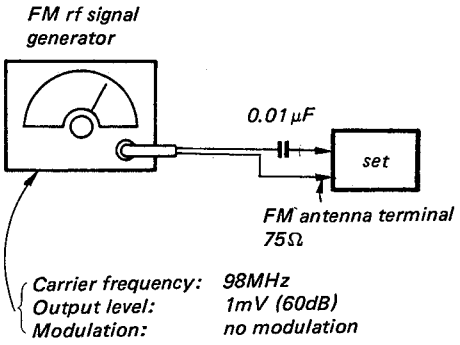


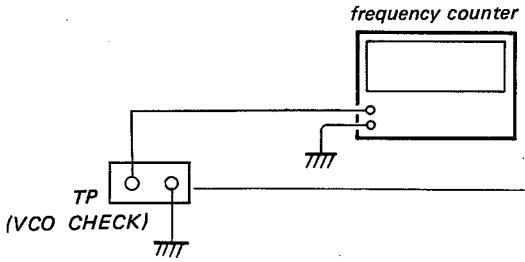
19kHz VCO ADJUSTMENT

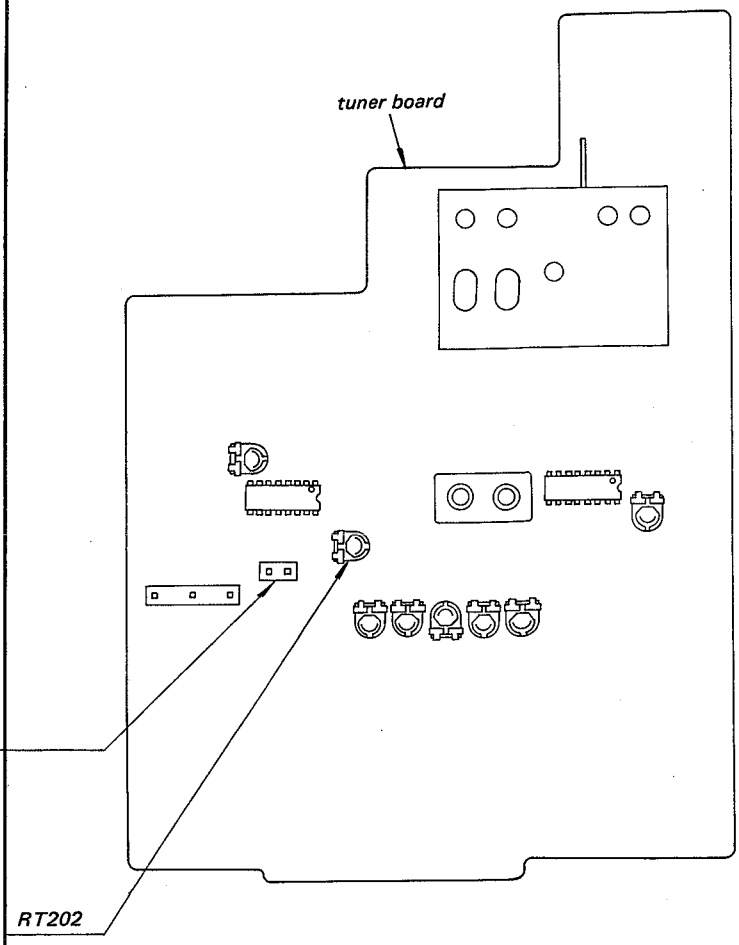
Setting:

FUNCTION switch:	TUNER
Band Selector:	FM
MODE switch:	STEREO

A) Regular Method





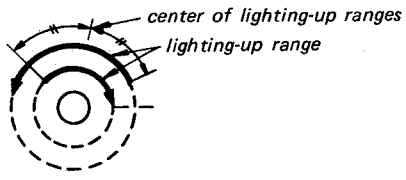


Procedure:

Adjust RT202 for 19kHz ±50Hz on the frequency counter.

B) Simple Method

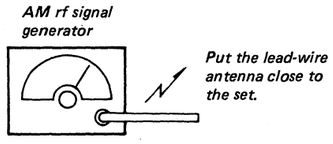
1. Tune the set to the FM stereo broadcasting signal.
2. Turn RT202 clockwise or counterclockwise and memorize the lighting-up ranges of STEREO lamp.
3. Secure RT202 at the center of the overlapped lighting-up range in both turning directions as shown below.

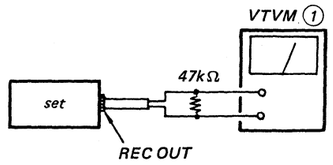


AM SECTION

(1) Setting:

MANUAL TUNING switch: ON
Band Selector: MW

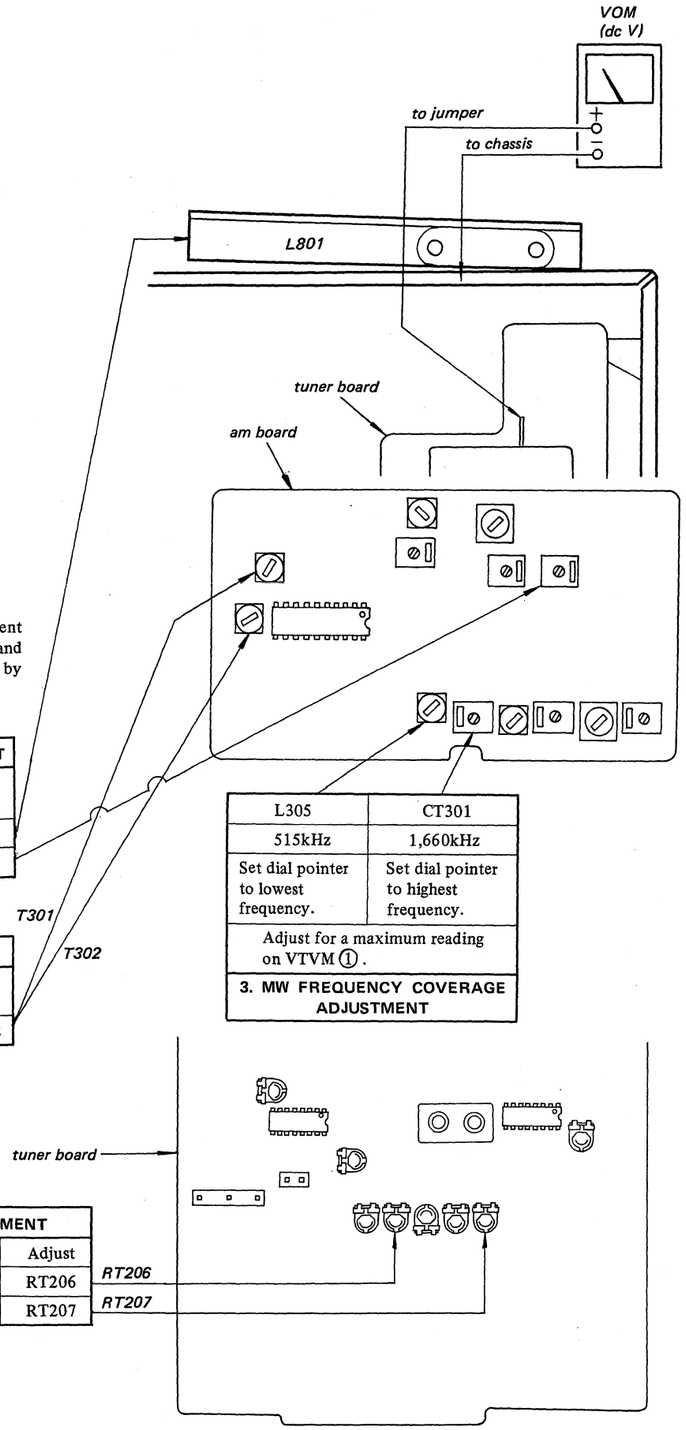




- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

4. MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
600kHz	L801
1,400kHz	CT304

1. AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM ①.	
450kHz	T301, T302



L305	CT301
515kHz	1,660kHz
Set dial pointer to lowest frequency.	Set dial pointer to highest frequency.
Adjust for a maximum reading on VTVM ①.	
3. MW FREQUENCY COVERAGE ADJUSTMENT	

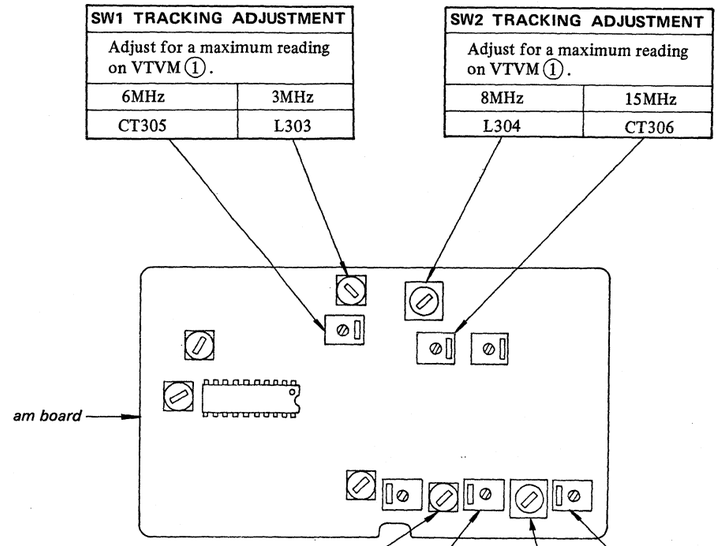
2. AM TUNING VOLTAGE ADJUSTMENT		
Dial Indication	VOM Reading	Adjust
highest frequency	25V	RT206
lowest frequency	1V	RT207

(2) Setting:

MANUAL TUNING switch ON
Band Selector: SW1 or SW2

SW1 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
6MHz	3MHz
CT305	L303

SW2 TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM ①.	
8MHz	15MHz
L304	CT306

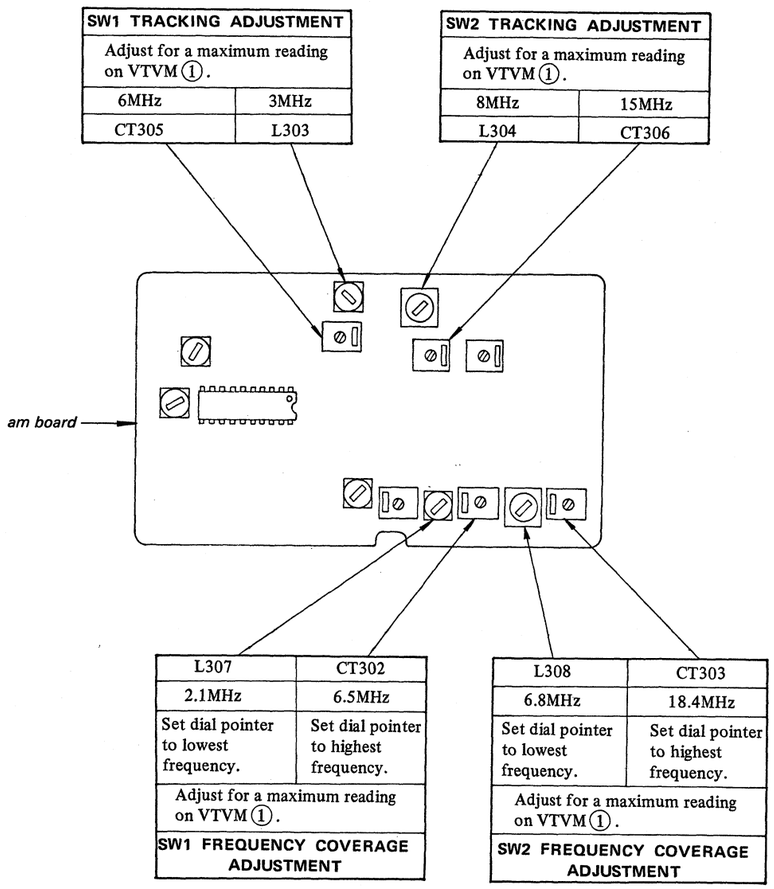


L307	CT302
2.1MHz	6.5MHz
Set dial pointer to lowest frequency.	Set dial pointer to highest frequency.
Adjust for a maximum reading on VTVM ①.	
SW1 FREQUENCY COVERAGE ADJUSTMENT	

L308	CT303
6.8MHz	18.4MHz
Set dial pointer to lowest frequency.	Set dial pointer to highest frequency.
Adjust for a maximum reading on VTVM ①.	
SW2 FREQUENCY COVERAGE ADJUSTMENT	

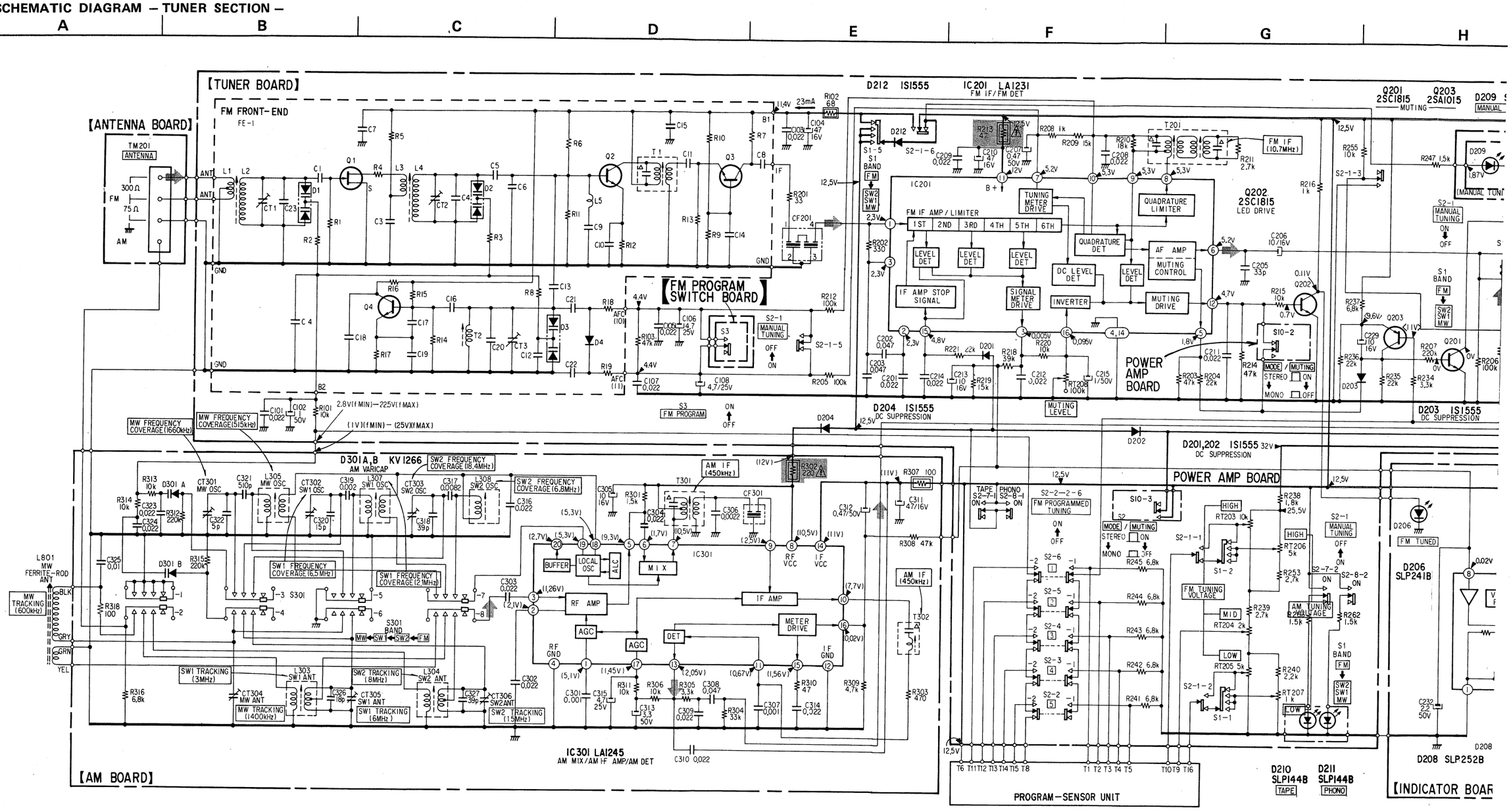
(2) Setting:

MANUAL TUNING switch ON
Band Selector: SW1 or SW2



MEMO

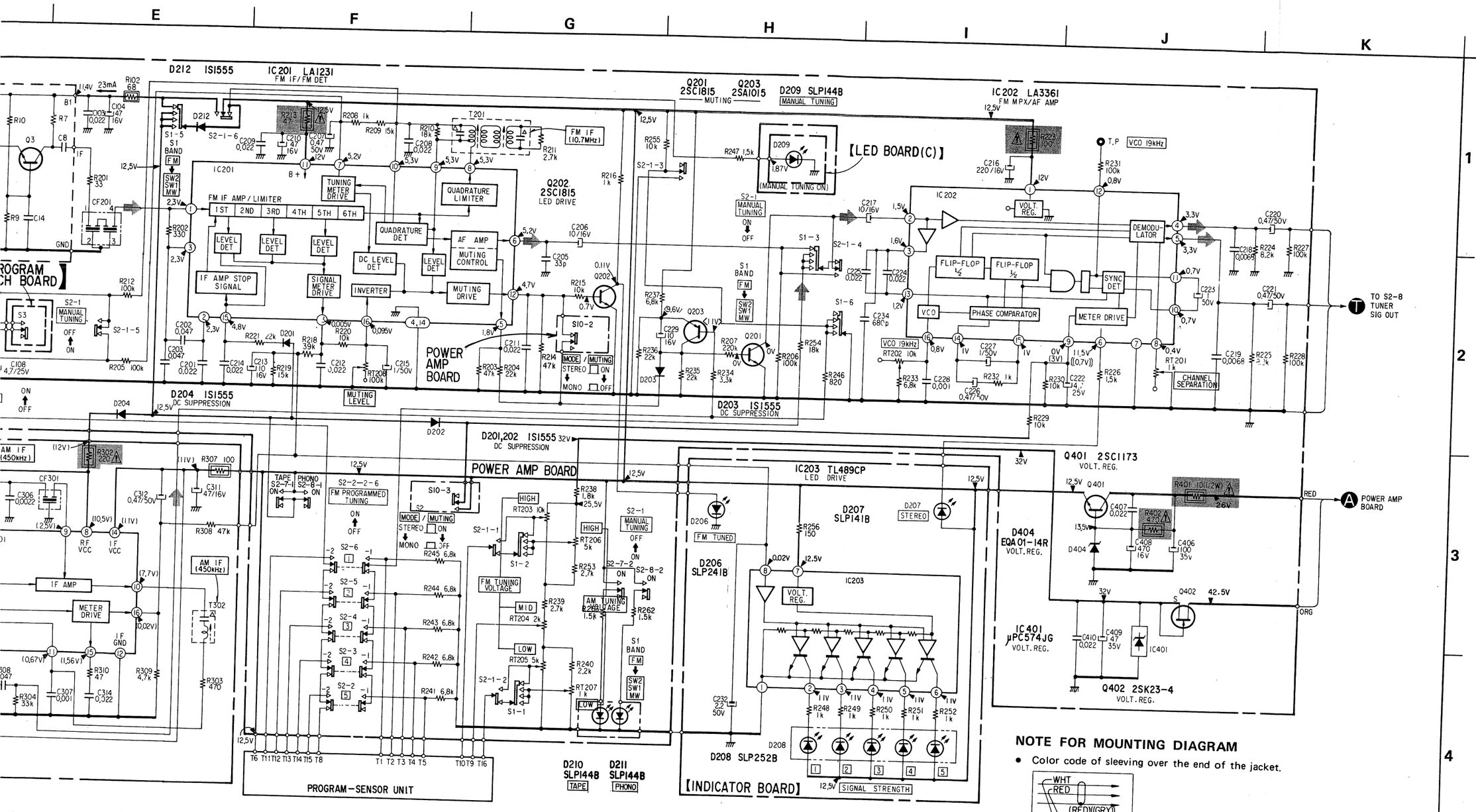
4-1. SCHEMATIC DIAGRAM – TUNER SECTION –



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

NOTE FOR SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅛W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- △ : internal component.
- : signal path
- ——: B+ bus.
- – – –: B– bus.
- Voltages are dc with respect to ground unless noted.
- Readings are taken under no-signal (detuned) with a VOM (20 kΩ/V).
  ( ) : AM
- Voltage variations may be noted due to normal production tolerances.



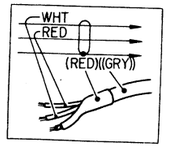
...by shading and mark
Replace only with

NOTE FOR SCHEMATIC DIAGRAM

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/8 W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- FW : nonflammable resistor.
- △ : internal component.
- ▩ : signal path
- ——: B+ bus.
- – – –: B– bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (20 kΩ/V).
  ( ) : AM
- Voltage variations may be noted due to normal production tolerances.

NOTE FOR MOUNTING DIAGRAM

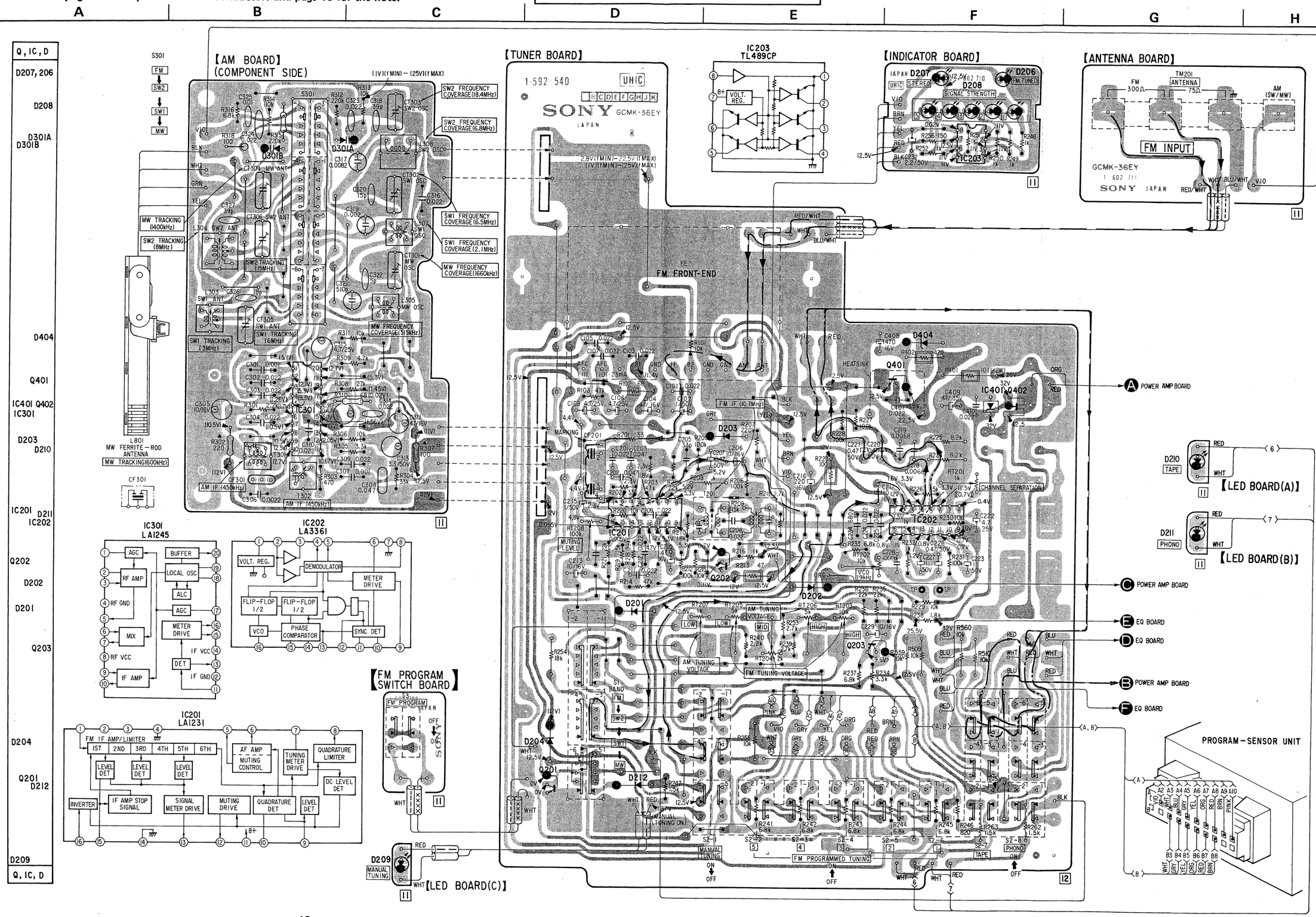
- Color code of sleeving over the end of the jacket.



- ○—: parts extracted from the component side.
- ●—: parts extracted from the conductor side.
- [ ]: indicates side identified with part number.
- ▩ : B+ pattern
- ▬▶ : signal path
- ▬▶ : L-CH signal path
- ▬▶ : R-CH signal path

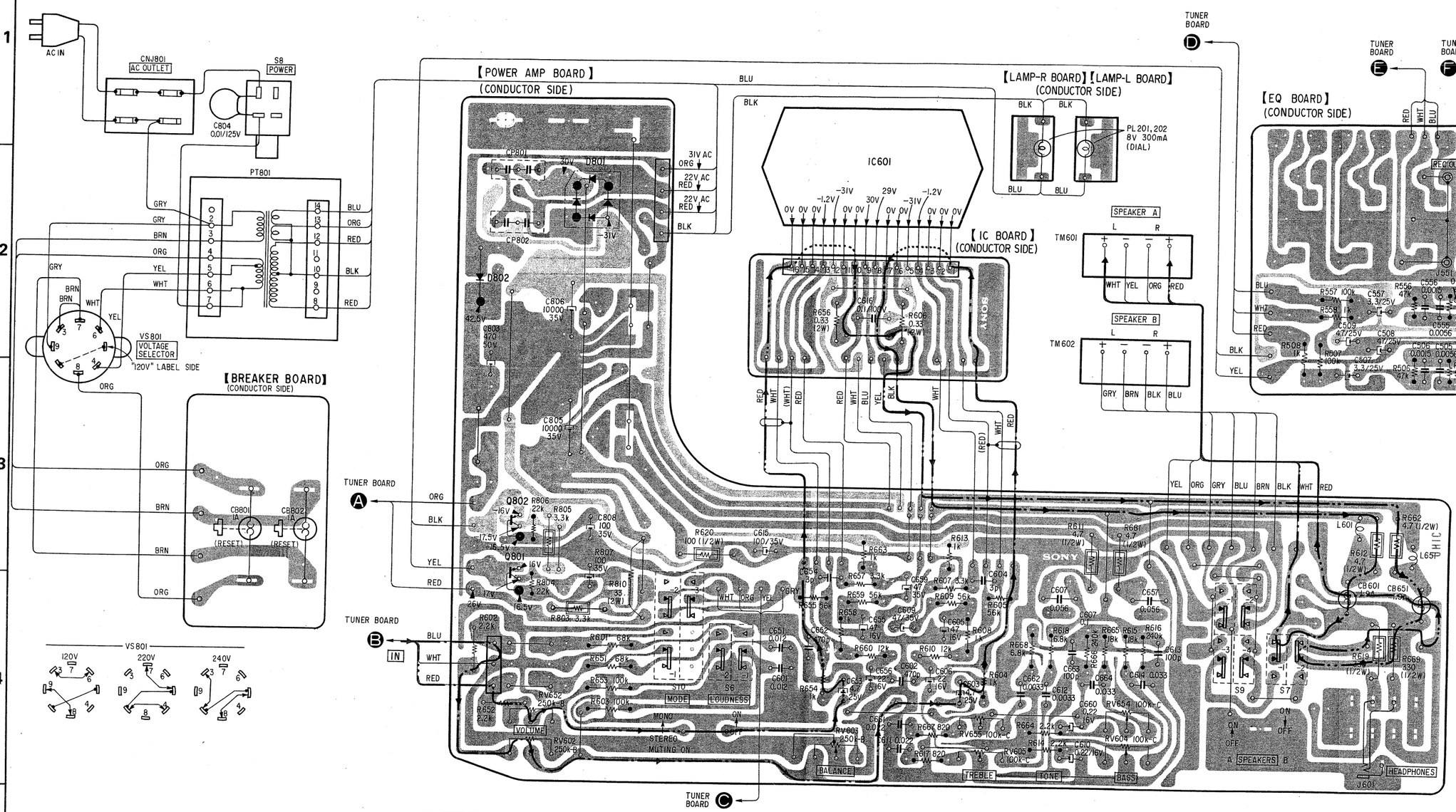
4-2. MOUNTING DIAGRAM – TUNER SECTION –

Refer to page 25 for replacement semiconductors and page 18 for the note.



4-3. MOUNTING DIAGRAM – AUDIO AMP SECTION –

Refer to page 25 for replacement semiconductor and the note.

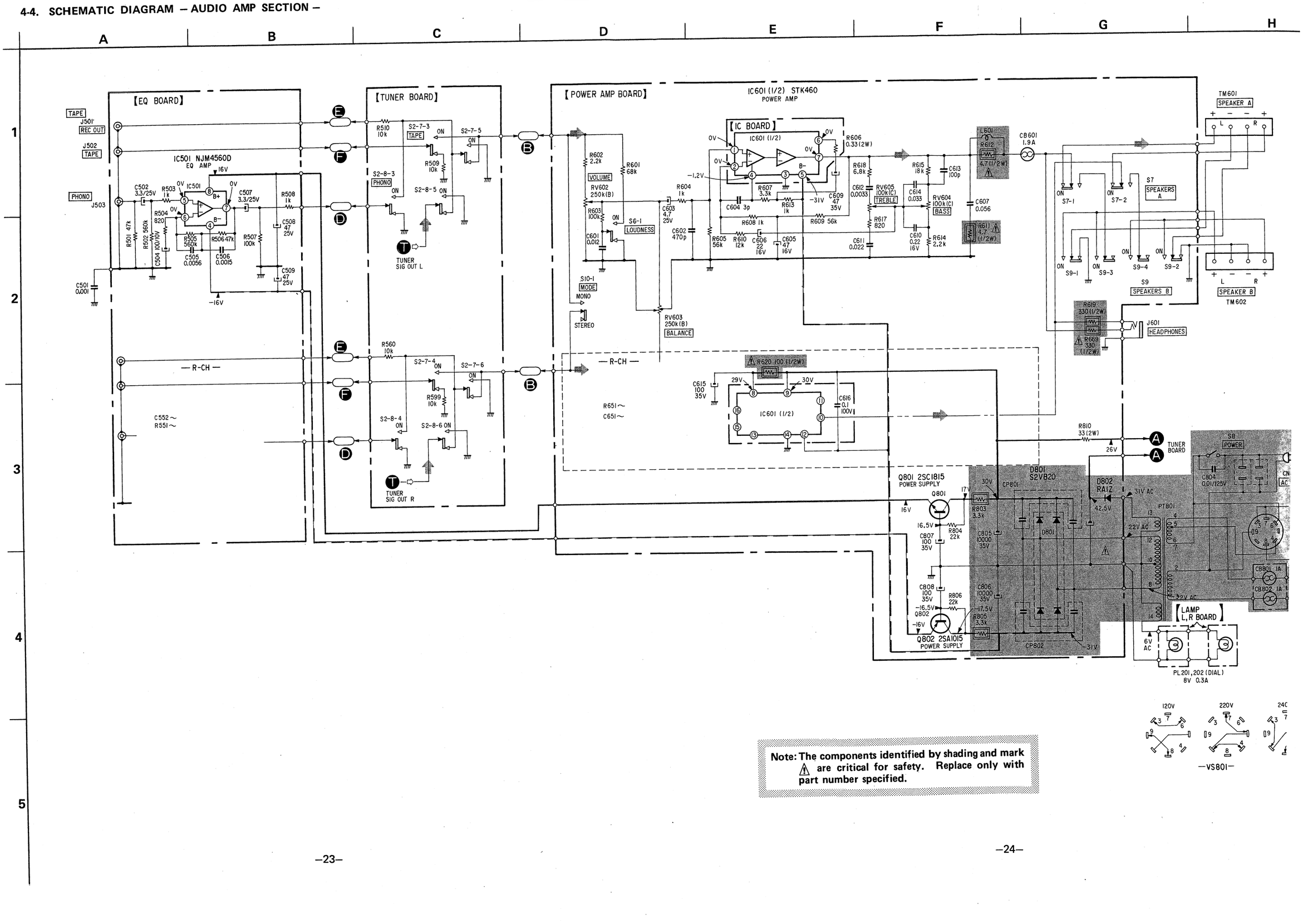


Q IC	802 801	IC601	
D	802	801	

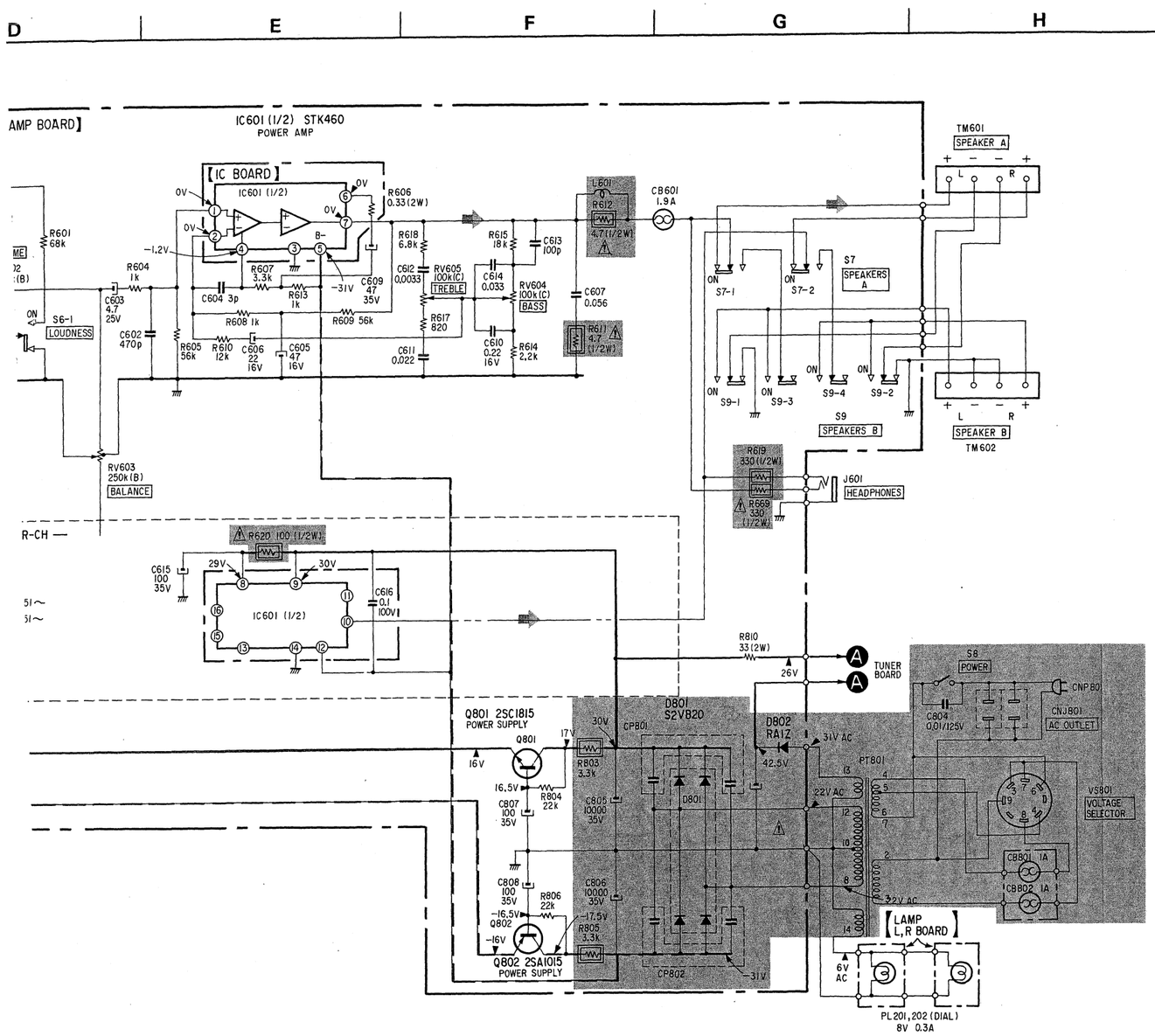
● : B+ pattern

* : B- pattern

4-4. SCHEMATIC DIAGRAM — AUDIO AMP SECTION —



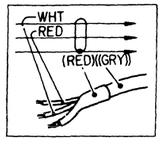
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

NOTE FOR MOUNTING DIAGRAM:

- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- [ ]— : indicates side identified with part number.
- ▬▶▬ : signal path
- ▬▶▬ : L-CH signal path
- ▬▶▬ : R-CH signal path

NOTE FOR SCHEMATIC DIAGRAM:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅛W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- ▭ : nonflammable resistor.
- △ : internal component.
- ——: B+ bus.
- – – –: B– bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (20kΩ/V).
  ( ) : AM
- Voltage variations may be noted due to normal production tolerances.
- Switch

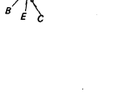
Ref. No.	Switch	Position
S2	FUNCTION	OFF
S6	LOUDNESS	OFF
S7, 9	SPEAKER	A
S8	POWER	OFF
S10	MODE	STEREO

- ▶ : signal path

Replacement Semiconductors

For replacement, use semiconductors except in ( ).

Q201, 202: 2SC1364 (2SC1815)



Q203: 2SA1015

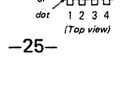
Q401: 2SC1173

Q402: 2SK105A

2SK23

Q801: 2SC1364 (2SC1815)

Q802: 2SA1015



IC201: LA1231
IC202: LA3361

IC203: TL489CP

IC301: LA1245

IC401: μPC574J

IC501: NJM4560D-D (NJM4560)

IC601: STK460

D201–204, 215: 1S1555

D206: SLP241B
D207: SLP141B
D209, 210, D211: SLP144B

D208: SLP252B-06 (SLP252B)

D301A, B: KV1226

D404: EQB01-14 (EQA01-14R)

D801: S2VB20

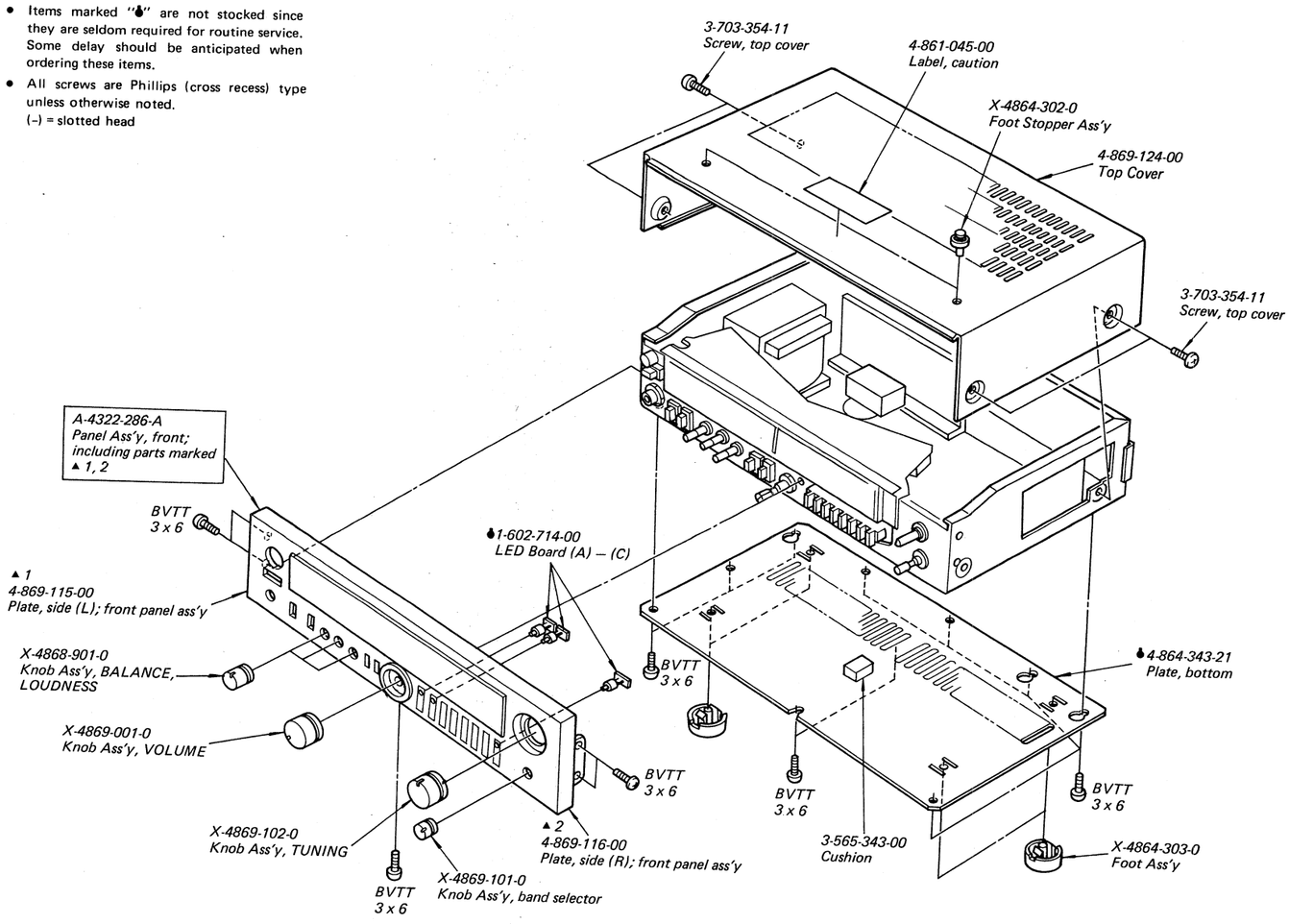
D802: 10E2 (RA-1Z)

SECTION 5
EXPLODED VIEWS

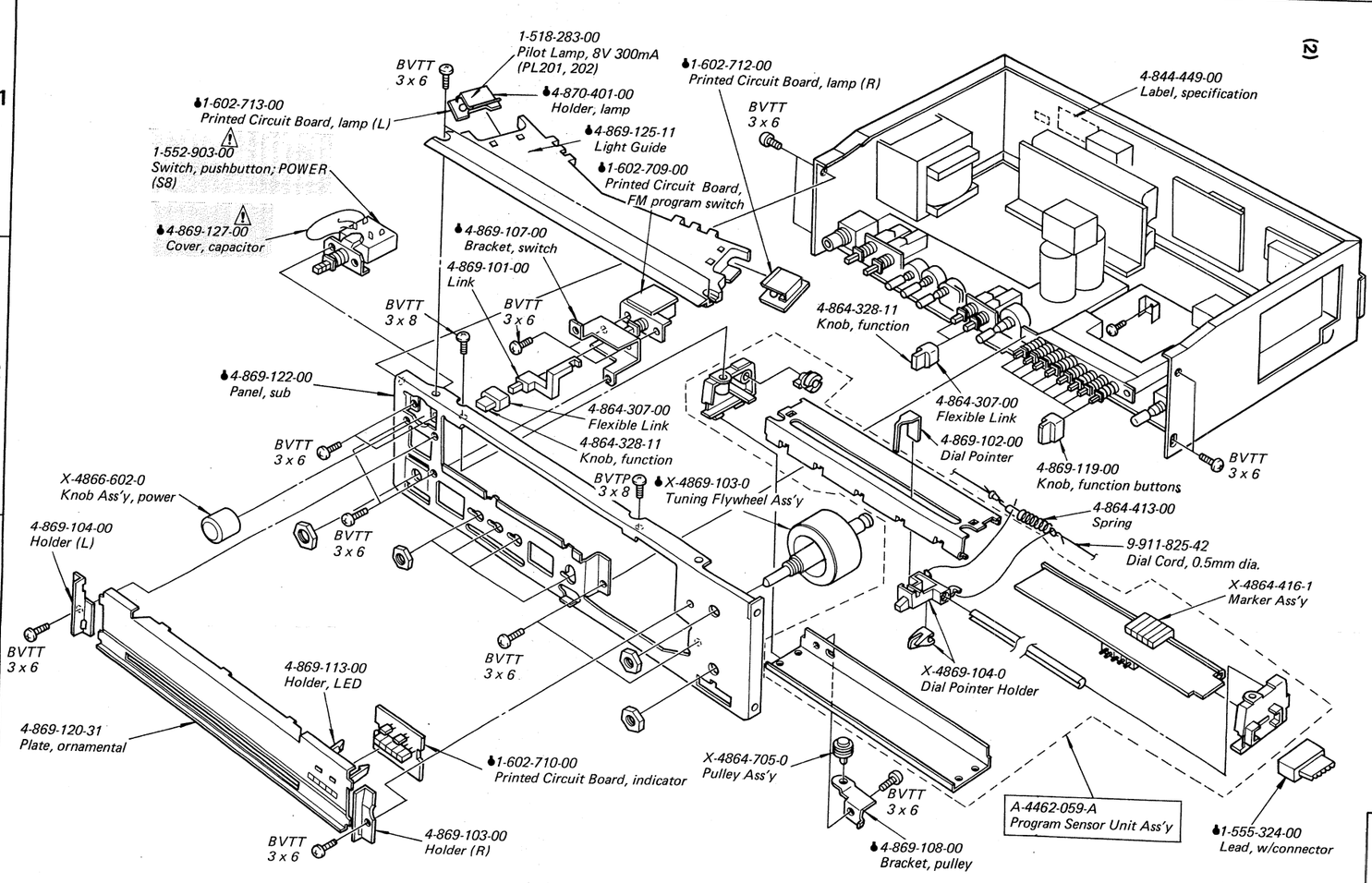
Note:

- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

(1)



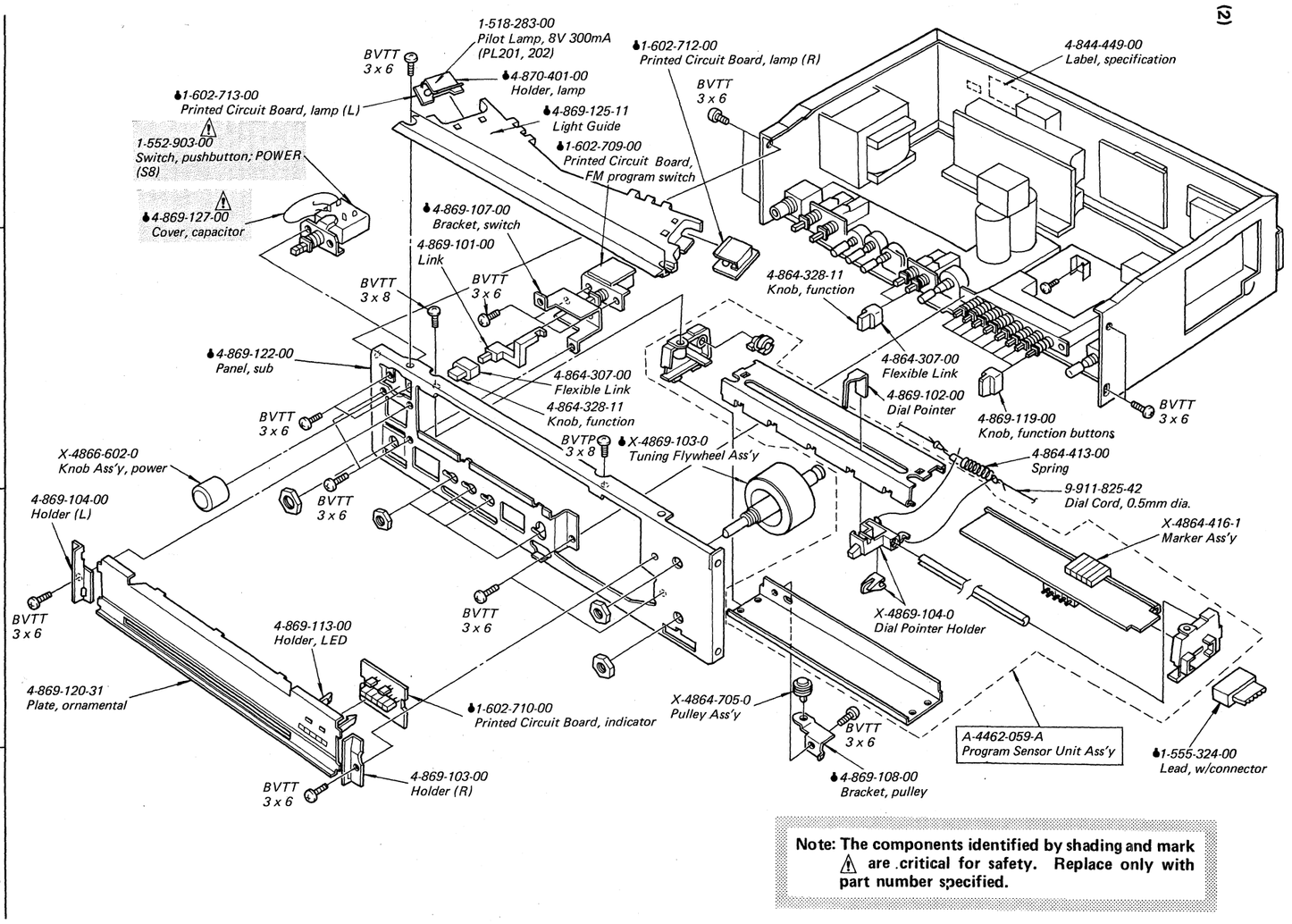
(2)



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

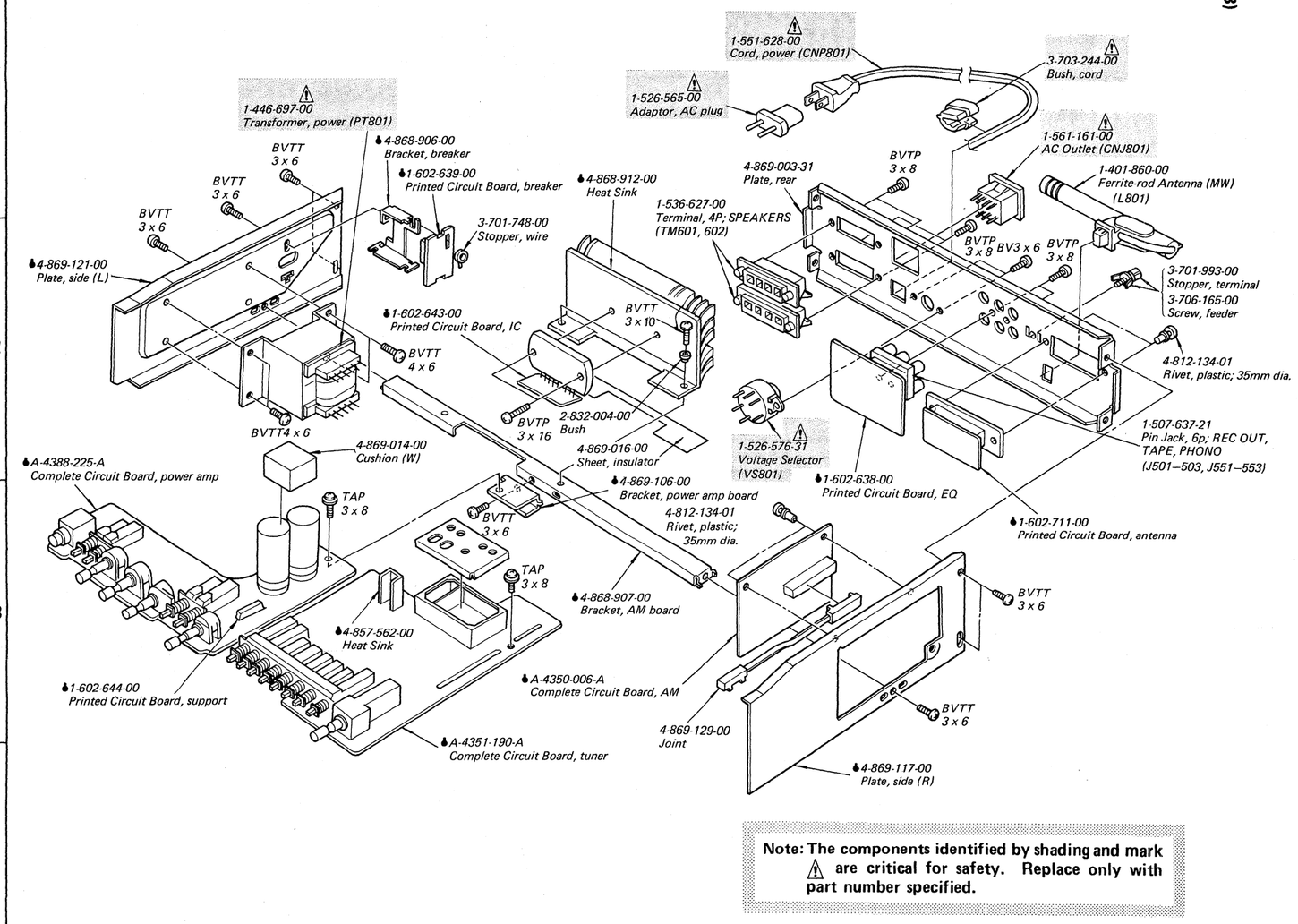
(3)

(2)



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(3)



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*
	SEMICONDUCTORS	
	Transistors	
⇒ Q201, 202	8-729-663-47	2SC1364
Q203	8-729-201-52	2SA1015
Q401	8-719-217-33	2SC1173
⇒ Q402	8-729-105-40	2SK105A
⇒ Q801	8-729-663-47	2SC1364
Q802	8-729-201-52	2SA1015
	ICs	
IC201	8-759-812-31	LA1231
IC202	8-759-833-61	LA3361
IC203	8-759-904-89	TL489CP
IC301	8-759-812-45	LA1245
IC401	8-759-157-40	μPC574J
⇒ IC501	8-759-745-61	NJM4560D-D
IC601	8-759-846-00	STK460
	Diodes	
D201–204	8-719-815-55	1S1555
D206	8-719-922-41	SLP241B
D207	8-719-900-41	SLP141B
⇒ D208	8-719-925-26	SLP252B, LED BLOCK
D209–211	8-719-901-44	SLP144B
D215	8-719-815-55	1S1555
D301A, B	8-719-912-27	KV1226
⇒ D404	8-719-931-14	EQB01-14
D801	8-719-502-20	S2VB20
⇒ D802	8-719-200-02	10E2
	CAPACITORS	

All capacitors are in μF. Common capacitors are omitted. Refer to the lists on pages 31 and 32 for their part numbers.

C803	⚠1-123-516-00	470	50V	elect
C804	⚠1-161-749-00	0.01	125V	ceramic
C805, 806	⚠1-123-642-00	10,000	35V	elect
CP801,802	⚠1-102-394-00	0.01+0.01	250V	ceramic

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	*Part No.*	*Description*
CT301–305	1-141-171-XX	Trimmer
CT306	1-141-171-XX	Trimmer
	RESISTORS	

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 33 for their part numbers.

R213	⚠1-247-099-00	47	¼W	carbon (nonflammable)
R223	⚠1-247-107-00	100	¼W	carbon (nonflammable)
R302	⚠1-247-115-00	220	¼W	carbon (nonflammable)
R401	⚠1-247-192-00	10	½W	carbon (nonflammable)
R402	⚠1-247-123-00	470	¼W	carbon (nonflammable)
R606, 656	1-207-615-00	0.33	2W	metal plate
R611, 612	⚠1-247-188-00	4.7	½W	carbon (nonflammable)
R619	⚠1-247-228-00	330	½W	carbon (nonflammable)
R620	⚠1-247-216-00	100	½W	carbon (nonflammable)
R669	⚠1-247-228-00	330	½W	carbon (nonflammable)
R803, 805	⚠1-247-252-00	3.3k	½W	carbon (nonflammable)
RT201	1-226-233-00	1k-B, adjustable		
RT202,203	1-226-236-00	10k-B, adjustable		
RT204	1-226-234-00	2k-B, adjustable		
RT205,206	1-226-235-00	5k-B, adjustable		
RT207	1-226-233-00	1k-B, adjustable		
RT208	1-226-239-00	100k-B, adjustable		
RV602,652	1-226-836-00	250k-B/250k-B, variable		
RV603	1-226-227-00	250k-B, variable		
RV604,654 RV605,655	1-226-862-00	100k-C/100-k-C, variable		

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
		MISCELLANEOUS
CB601,651	1-532-566-00	Circuit Breaker
CB801	⚠1-532-535-00	Circuit Breaker
CF201	1-527-346-00	Filter, solid state
CF301	1-527-599-00	Filter, mechanical
CNJ801	⚠1-561-161-00	AC Outlet
CNP801	⚠1-551-628-00	Cord, power
FE1	1-463-322-00	FM Front-end (W)
J501–503, J551–553	1-507-637-21	Pin Jack, 6p; REC OUT, TAPE, PHONO
J601	1-507-659-00	Jack, HEADPHONES
L301	1-407-169-XX	100μH, microinductor
L303	1-401-865-00	SW1 ANT Coil
L304	1-401-866-00	SW2 ANT Coil
L305	1-405-907-00	MW OSC Coil
L307	1-405-912-00	SW1 OSC Coil
L308	1-405-913-00	SW2 OSC Coil
♦L601, 651	1-420-872-00	Coil
L801	1-401-860-00	Ferrite-rod Antenna (MW)
PL201,202	1-518-283-00	Pilot Lamp, 8V 300mA
PT801	⚠1-446-697-00	Transformer, power
S1	1-553-315-00	Switch, rotary
S2	1-553-309-00	Switch, pushbutton
S3	1-553-283-00	Switch, pushbutton
S6, 7	1-553-903-00	Switch, pushbutton; LOUDNESS, SPEAKERS
S8	⚠1-553-364-00	Switch, pushbutton; POWER
S9, 10	1-553-308-00	Switch, pushbutton; LOUDNESS, SPEAKERS
S301	1-553-313-00	Switch, slide; BAND
T201	1-404-170-00	Transformer, fm if
T301	1-409-348-00	Coil, mechanical filter
T302	1-404-266-00	Transformer, am if
TM601,602	1-536-627-00	Terminal, 4P; SPEAKERS
VS801	⚠1-526-576-31	Voltage Selector
	1-217-589-00	Cross Conductor (MELF)
	1-463-322-00	Front-end (W)
	⚠1-526-565-00	Adaptor, AC plug
	♦1-555-324-00	Lead, w/connector

Ref. No.	Part No.	Description
		COMPLETE CIRCUIT BOARDS
	♦A-4350-006-A	AM
	♦A-4351-190-A	TUNER
	♦A-4388-225-A	Power Amp
		PRINTED CIRCUIT BOARDS
	♦1-602-638-00	EQ
	♦1-602-639-00	Breaker
	♦1-602-643-00	IC
	♦1-602-644-00	Support
	♦1-602-709-00	FM PROGRAM Switch
	♦1-602-710-00	Indicator
	♦1-602-711-00	ANTENNA
	♦1-602-712-00	Lamp (R)
	♦1-602-713-00	Lamp (L)
	♦1-602-714-00	LED (A)–(C)

ACCESSORIES AND PACKING MATERIALS

Part No.	Description
3-701-630-00	Bag, plastic
3-783-228-51	Manual, instruction
3-794-869-11	Card, operation
4-864-354-00	Sheet, plastic
4-869-010-00	Carton, individual
4-868-927-00	Cushion
4-868-928-00	Cushion

• Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTROLYTIC CAPACITORS

RATING → : Use the high voltage rated one.

CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	–	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	–
3300	1-121-661-00	1-123-075-00	1-123-071-00	–	–	–

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	–	–	–	–
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	–	1-123-028-00
3.3	1-121-995-00	–	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	–	–
47	1-123-251-00	1-121-919-00	–	–
100	1-123-084-00	–	–	–

CERAMIC CAPACITORS

RATING

CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING → : Use the high voltage rated one.

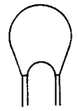
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS

RATING

CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

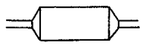
TANTALUM CAPACITORS



RATING → : Use the high voltage rated one.

CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	–	–	–	–	1-131-412-00	→	1-131-406-00
0.68	–	–	–	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	–	–	1-131-418-00	–	1-131-413-00	→	1-131-408-00
1.5	–	1-131-421-00	–	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	–	1-131-419-00	–	1-131-414-00	1-131-355-00	1-131-349-00
3.3	–	1-131-422-00	–	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	–	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	–	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	–
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	–			
68	1-131-394-00	1-131-388-00	–	–			
100	1-131-395-00	–	–	–			

TANTALUM CAPACITORS



RATING

CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			–	–	1-131-262-00	1-131-278-00
0.33			–	–	1-131-263-00	1-131-279-00
0.47			1-131-169-00	–	1-131-264-00	1-131-280-00
0.68			–	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	–	1-131-266-00	1-131-282-00
1.5		1-131-250-00	–	–	1-131-267-00	1-131-283-00
2.2		–	–	1-131-259-00	1-131-268-00	1-131-284-00
3.3		–	1-131-255-00	–	1-131-269-00	–
4.7		1-131-251-00	1-131-171-00	–	1-131-270-00	–
6.8		–	–	1-131-260-00	1-131-271-00	–
10	–	–	1-131-256-00	–	1-131-272-00	–
15	–	1-131-252-00	–	1-131-261-00		
22	–	–	1-131-257-00	–		
33	1-131-176-00	1-131-253-00	1-131-173-00	–		
47	1-131-288-00	1-131-174-00	–	–		
100	1-131-177-00					

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

Nut, Washer, Retaining ring:

Reference Designation	Shape	Description	Remarks
		SCREWS	
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCREWS	
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

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